DOCUMENT RESUME

ED 111 471 JC 750 493

AUTHOR	Winter, Gene; And Others
TITLE	Reality-Based Evaluation for Two-Year College Occupational Programs. Pilot Edition.
INSTITUTION	State Univ. of New York, Ithaca. Cornell Inst. for Research and Development in Occupational Education.
SPONS AGENCY	New York State Education Dept., Albany. Bureau of Two-Year Coll. Programs.; New York State Education Dept., Albany. Office of Occupational and Continuing Education.
REPORT NO	RP-75-5
PUB DATE	Jun 75
NOTE	45p.
EDRS PRICE	MF-$0.76 HC-$1.95 Plus Postage
DESCRIPTORS	Cost Effectiveness; Data Analysis; Data Collection; Educational Assessment; *Evaluation Methods; *Junior Colleges; Models; *Program Evaluation; *Technical Education; *Vocational Education
IDENTIFIERS	*Reality Based Evaluation

ABSTRACT

This handbook presents a pilot evaluation model developed with the cooperation of occupational education staff members from the two-year colleges of New York State. The project staff, the steering committee, and principal consultants began with the assumption that evaluation can be a valuable and continuous part of program effort, providing critical feedback that will identify and support essential program modifications. Reality-based evaluation (RBE) is described as a three-phase process: (1) clarifying a program's real intent; (2) collecting information on what that program actually does; and (3) interpreting how well it was done and recommending what should be done. Phase I, "Clarification," results in a management outline, subject to change and based upon the realities of the program as they are seen. Phase II, "Data Collection," results in a working plan which implements Phase I objectives. Phase III, "Interpretation," results in the compilation of evaluation conclusions. Forms paralleling the RBE process phases are provided to facilitate consistent recording of data as it is derived at each procedural step. Techniques of data collection and approaches to cost analysis are listed and described. The annotated bibliography is indexed according to problems which may occur in the course of the evaluation. (NHM)

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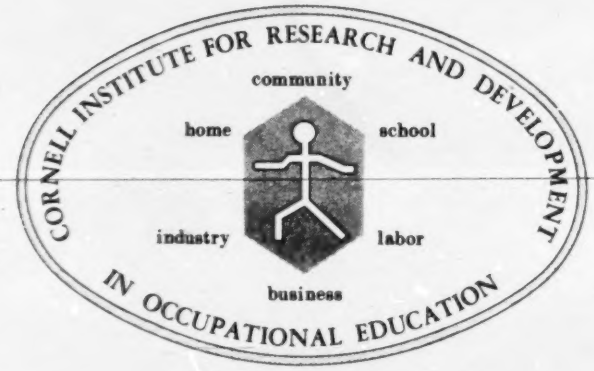
REALITY-BASED EVALUATION

FOR

TWO-YEAR COLLEGE OCCUPATIONAL PROGRAMS



Cornell Institute for Research and Development
in Occupational Education
New York State College of Agriculture and Life Sciences
Cornell University, Ithaca, NY 14853

In Cooperation with:

Office of Occupational Education
Bureau of Two-Year College Programs
New York State Education Department

Research Pub. 75-5
June 1975

JC 750 493

FOREWORD

Evaluation can be a threatening word. The process of evaluation can be so complex and time-consuming that it breaks down under its own weight. The easy way out is to hire a third party to do a summative evaluatior toward the close of a program effort to satisfy the grantor's requirement.

This project staff, the steering committee and principal consultants began with the assumption that evaluation can be a valuable and continuous part of program effort, providing critical feedback that will identify and support program modifications essential to getting the job done.

This effort to develop a "Reality-Based Evaluation" has involved the practitioner. We believe that the product will be useful. During the coming year it will be put to the test in the two-year colleges of New York State. Hence the caveat "Pilot Edition." After calcining in the crucible of practice, necessary modifications will be made and incorporated in a final edition to be published during the summer of 1976.

The evolution of this product has been, and will continue to be, dependent on the contributions of the professional community. We appreciate the contributions made by those named here and invite your participation and constructive suggestions during this pilot stage.

John Wilcox, Director
Institute for Occupational Education

AN INSERVICE STRATEGY FOR IMPROVING LOCAL EVALUATION

FOR TWO-YEAR COLLEGE PROGRAMS

IN OCCUPATIONAL EDUCATION

VEA-75-2-562

PROJECT STAFF

Gene Winter, Project Director
Eric Beamish, Research Associate
Donald Moore, Research Assistant
LaVerna Fadale, Evaluator
Betty Naegele, Editorial Asst.

STEERING COMMITTEE AND PRINCIPAL CONSULTANTS

Robert Bruce
Professor of Extension Education
Cornell University

Paul Chakonas, Associate
Bureau of Two-Year College Programs
State Education Department

Lee Cohen, Director
Institute for Research and Development
in Occupational Education
City University of New York

William Drake
Professor of Agricultural
and Occupational Education
Cornell University

Kenneth Doran, Acting Provost
for Vocational and Technical Education
Office of the Vice Chancellor for Academic Programs
State University of New York

This handbook is a pilot edition developed with the cooperation of occupational education staff members from the two-year colleges of New York State. The materials herein will undergo continued field-testing and modification during the coming year.

COOPERATING TWO-YEAR COLLEGE STAFF MEMBERS AND THEIR AREA OF RESPONSIBILITY

The following two-year college staff members participated in one or more of the project workshops.

Auburn Community College
- Raymond B. Cooke - Certificate & Diploma Programs
- Ester Orioli - Career Counseling

Bronx Community College
- Constance Lerner - Cooperative Education

Broome Community College
- Joseph Gay - Health Sciences
- Robert Newcomb - Business
- Carl Brunner - Biological Sciences
- David Kenien - Engineering Technology
- Joseph Peone - Engineering Science
- Richard Peters - Business

Agricultural & Technical College at Canton
- Roy Bixby - Community Out-Reach Vocational Counseling
- Patrick Ver Schneider - Community Out-Reach Vocational Counseling

Corning Community College
- Hans P. Appelt - Data Processing
- John Levanduski - Data Processing

Agricultural & Technical College at Delhi
- Wilbur M. Farnsworth - Agriculture
- Dan Moskwa - Vocational Division

Dutchess Community College
- Mathew P. Fitzgerald - Social & Community Service Technology
- Lawrence H. Monaco - Collegiate Technology

Educational Opportunity Center, Syracuse
- Robert A. Mullane - Occupational Skill Development
- Robert McKinnan - Occupational Skill Development

Educational Opportunity Center, Troy
- John DeNicolo - Occupational Skill Development

Erie Community College
- Edward G. Fix - Engineering Technology
- George A. Lankes - Business and Public Services

Fulton-Montgomery College
- Alfred Mastrangeli - Automotive Technology

Hilbert College
- Steven Golen - Business
- Adele G. Nowak - Business
- Sue Stanley - Library Technology

Hostos Community College
Daisy Laure - Counselor
Peter Martin - Student Services Administration

Hudson Valley Community College
Paul F. Goliber - Engineering Technologies

LaGuardia Community College
Flora Mancuso - Paraprofessional Program

Monroe Community College
Elizabeth B. Gennarino - Curriculum Development
John Lloyd - Business
Don Litzinger - Business

Agricultural & Technical
College at Morrisville
John F. Caezza - Health Science
Donald F. Jones - Agriculture

New York City Community College
Carl E. High - Academic Administration
Joseph Ryan - Open Admissions Program

Niagara County Community College
Jerry J. Repetski - Mathematics, Physical Science & Technology

North Country Community College
Sunny Pek-Ho Oey - Community Mental Health

Queensborough Community College
Harold J. Smolin - Biological Sciences

Rockland Community College
Earl J. Lowell - Academic Administration
Debra Knapp - Career Programs

Schenectady County Community College
Raymond Castillo - Electrical Technology
Robert Holmes - Continuing Education

Tompkins-Cortland Community College
Dawn Cooper - Continuing Education
Thomas Mecca - Long-Range Planning

Trocaire College
Mary Marasco - Health Sciences
Marian Meyers - Health Sciences
Sister Mary Ernestine Downey - Nursing
Sister Mary Carmina - President

Villa Maria College of Buffalo
Carl B. Heintz - Food Services
JoAnn S. Hinton - Cooperative Education
James Manno - Business

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PROLOGUE

Overheard while leaving a staff meeting . . .

Department Chairperson
French: "So what do you think?"

Department Chairperson
Nägele: "About what?"

French: "About the required departmental evaluations."

Nägele: "We've got all next year to worry about it."

French: "I wish the Dean had given us a format. A reading list isn't very much help."

Nägele: "I'm going to amend my budget request and hire a consultant to do it."

French: "Do you think we all could get money to hire out the job?"

Nägele: "Probably not, but I'm going to try anyway."

(pause)

Nägele: "I took a graduate course in education evaluation last year. As I recall there were several models, but they were all too theoretical -- they didn't seem to fit our situation."

French: "What we really need is a cookbook. With my teaching load I haven't got time to study and design an approach."

(pause)

Nägele: "Didn't Adomiak go to a couple of workshops on evaluation last year? Maybe she has some materials that would help."

SELECTED DEFINITIONS OF EVALUATION

"Evaluation is comparing something to a standard with a view to making a decision."

--Robert L. Bruce, "Evaluation for Program Management," A working paper, Cornell University, Mimeograph.

"I am perfectly satisfied to follow Michael Scriven's advice and define evaluation as the assessment of merit."

--Daniel Stufflebeam, "A Conceptualization of Evaluation," A cassette tape presentation, American Educational Research Association, Washington, D.C. 1973.

"Evaluation is the continuous process of collecting valid and reliable data for the purpose of comparing program outcomes with program objectives to provide useful information for making sound decisions."

--William Drake, "An Outline of an Approach to Program Evaluation," Cornell University, Mimeograph.

"Evaluation is quality control of the processes and outcomes of an educational program."

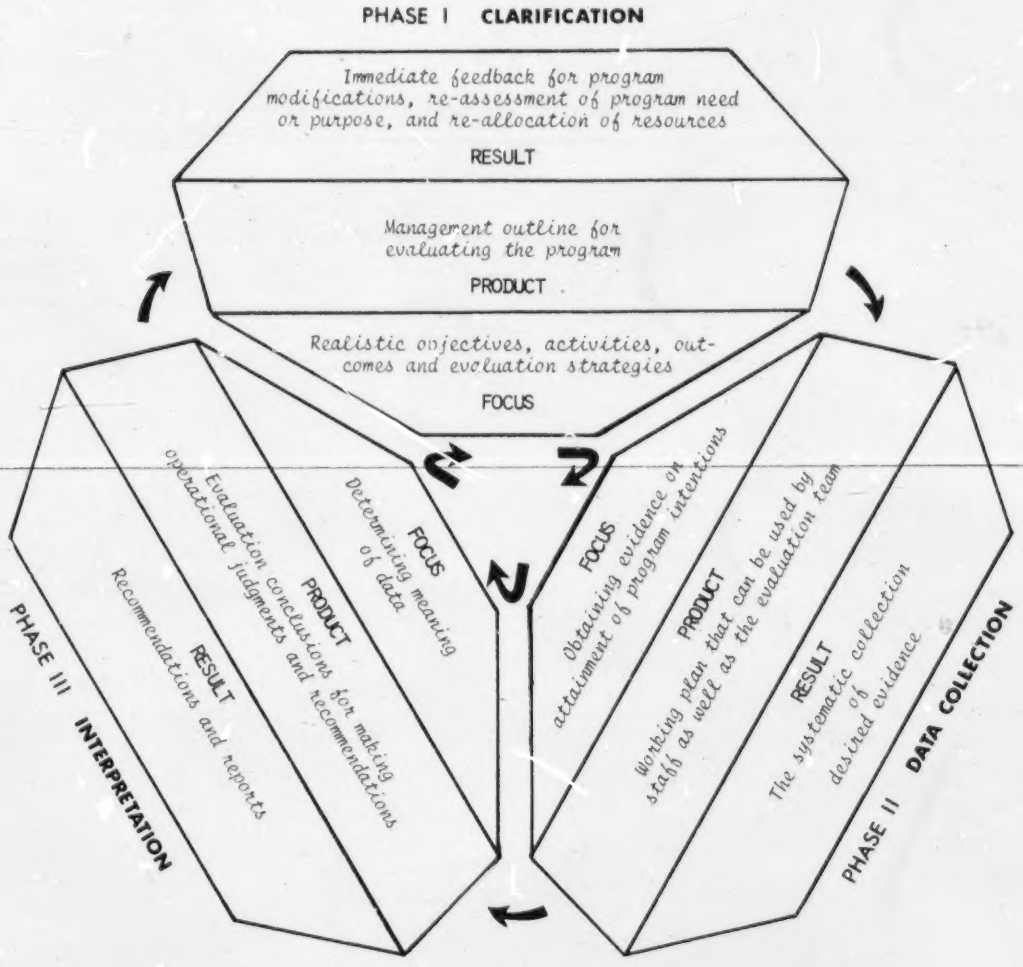
--John M. Gottman and Robert E. Clasen, Evaluation in Education: A Practitioner's Guide, Itasca, Illinois: F. E. Peacock Publishers, Inc., 1972, p. 16.

"Evaluation is the process of ascertaining the decision areas of concern, selecting appropriate information, and collecting and analyzing information in order to report summary data useful to decision makers in selecting among alternatives."

--Marvin C. Alkin, "Evaluation Theory Development," Evaluation Comment, II, October, 1969.

REALITY-BASED EVALUATION is clarifying what we really intend to do, collecting information on what we actually are doing, interpreting how well we did it, and recommending what should be done in the future.

MODEL OF REALITY-BASED EVALUATION


PHASE I CLARIFICATION
Immediate feedback for program modifications, re-assessment of program need or purpose, and re-allocation of resources
RESULT
Management outline for evaluating the program
PRODUCT
Realistic objectives, activities, outcomes and evaluation strategies
FOCUS
PHASE III INTERPRETATION
Evaluation conclusions for making operational judgments and recommendations
PRODUCT
Recommendations and reports
RESULT
Determining meaning of data
FOCUS
PHASE II DATA COLLECTION
Obtaining evidence on attainment of program intentions
FOCUS
Working plan that can be used by staff as well as the evaluation team
PRODUCT
The systematic collection of desired evidence
RESULT

The model implies a sequence and a time frame, but in practice the turn-around time varies with the objective. All steps are not necessarily followed in every case. The feedback cycle is often completed by the end of Phase I for certain objectives.

A major tenet of program evaluation is to prescribe treatment as soon as the diagnosis is confirmed.

WHY EVALUATE?

Evaluation is motivated by many factors -- economic, political, administrative, programmatic, educational. Regardless of its stimulus or intent, educators at all levels are faced with increasing demands to collect, analyze and interpret data relative to the future of their own or others' programs.

Some common reasons for evaluation are:

--to justify initiation of a new program

--to justify continuation of an existing program

--to comply with what is a required activity

--to pursue what is an acceptable activity

--to find out how well a program is working

--to make changes that will improve a program

--to make better informed decisions

Whatever the local purpose, it is important that motives be examined and clarified in order to overcome or reveal a biased mental set. The most defensible purpose for undertaking a comprehensive evaluation effort is to provide for better informed decisions. These decisions may be directed towards activity modification, revision of standards, refocusing of goals, reassessment of need, expansion, modularization or curtailment. Evaluation provides information. People make judgments.

WHAT IS "REALITY"?

"Reality" refers to the conditions under which local evaluation actually takes place. It contrasts sharply with the "textbook" evaluation situation or the "ideal" from which many evaluation processes proceed. The following statements are characteristic of this "reality" and indicate where departures from the "ideal" are most frequently encountered.

A. *The stated intentions of many programs reflect the confusion that surrounds terms such as missions, goals, objectives, behavioral objectives, and criterion references. The stated intentions of many programs are often general mission statements or ideals for which to strive.*

B. *The stated missions or goals of many programs suggest standards or outcomes that can rarely be achieved during the life of a program cycle and certainly cannot be known previous to the time that budget and program decisions must be made regarding revision, continuance or abandonment of the program efforts.*

C. *Clarified objective statements that reflect the goals and the reality of operational status must be derived as the basis of on-going evaluation and decision-making.*

D. *The people who request evaluative information for decisions are rarely the people that carry out the daily operations of the program.*

E. *If local program evaluation efforts are requested, the performance of the evaluation becomes an add-on responsibility for the operational staff.*

F. *All evaluation efforts fall short of a mythical perfect evaluation, but all evaluation efforts should result in better information for decision-making.*

Excellent evaluation models exist. Their low frequency of application to local evaluation efforts may be due to their appearance of being unnecessarily complex and conceptually discrete. Reality-based evaluation inevitably is local evaluation carried out largely by the operational staff. It is highly flexible and responsive both in its process and techniques to the actual conditions prevailing in a given operational context.

Reality-based evaluation takes into account both the persons responsible for conducting the evaluation activity and the actual conditions under which they must work in the day-to-day context of program operation. There are both advantages and disadvantages of this sometimes paradoxical position.

1) *Most educators are continually evaluating program efforts, but not necessarily formally or comprehensively.*
2) *The local evaluator will be forced to compromise in terms of time and energy devoted to evaluation efforts but often is most aware of how best to bypass low return activities.*
3) *Local evaluators are predisposed to bias in both data collection and interpretation, yet have the most intimate knowledge of the program, what data are needed and how to interpret them.*
4) *Local evaluators may see themselves as having most to lose but also have the most to gain, particularly as the initiator of the effort.*

What is a Program in the Context of Program Evaluation?

Program is an inclusive term rather than a delimiting term.

A program is the sum total of its many components:

Student performances, knowledges & attitudes
Personnel performances, knowledges & attitudes
Procedures and processes
Services and products
Curricula
Instructional strategies & materials

and . . . .

and . . . .

In approaching evaluation it is useful to examine all the components of a program and to consider their patterns, sequences and relationships in order to resolve the question of evaluate what?

Verification of curriculum content can be undertaken exclusive of both instructor proficiency and student learning. Program outcomes can be measured without examining the curriculum. Instructional materials are often evaluated on their potential impact. Many occupational programs have been "evaluated" by counting the number of graduates that are employed at a given point in time. Program evaluation is not personnel proficiency evaluation but can raise questions that lead to personnel performance assessment.

An educational program has been called an organized set of activities designed to result in specified outcomes. In the final analysis a program is what you deem it to be. The specified outcomes provide the basis for assessing its efficacy.

How to Proceed?

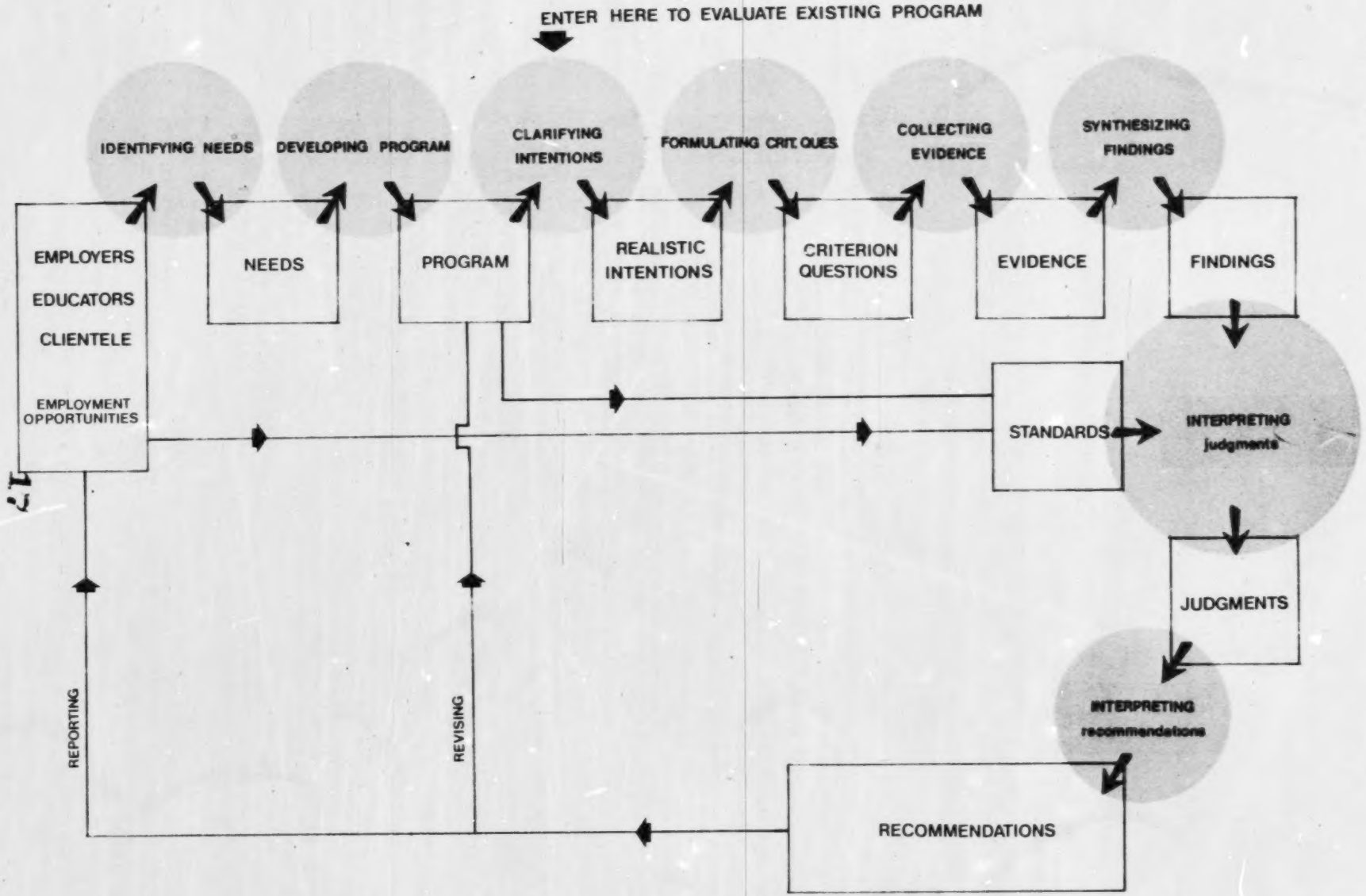
This handbook is designed to answer this question. The materials represent a consensus of the knowledge, attitudes and experience of the 53 staff members whose names appear on pages iii and iv of this manual. The handbook will guide you, not direct you. The materials that follow assume that a program exists. They provide a model, sample forms and step-by-step guidelines that can be followed throughout the evaluation effort. All steps will not be useful for all programs. The user is encouraged to adapt the guidelines as dictated by professional knowledge and expertise and by local program characteristics.

It will require time and effort. The results will not always totally please you. But you should find that the trip has been worthwhile and that, to some extent, the experience has been as beneficial as the results.

Overview of Reality-Based Program Evaluation

A comprehensive program planning and evaluation process model is presented on page 10. The circles represent evaluative activities while the squares represent results of these activities. When an on-going program is being evaluated, activities begin with clarifying intentions even though, as evaluation proceeds, it may be necessary to return to activities preceding clarification. When an evaluation plan is being prepared for a non-operational program, activities usually begin with identifying needs and proceed more or less sequentially through the model steps. Feedback loops are not shown on the diagram to avoid undue clutter and confusion. It is taken for granted, however, that each activity feeds backward as well as forward and that a constant process of adjustment occurs throughout the model as decisions are made at each subsequent step.

The complete process begins with NEEDS *identified through inputs from employers, educators, clientele and employment opportunities. A* PROGRAM *is developed to meet those individual and societal needs. The program has* OBJECTIVES *which can lead to* CRITERION QUESTIONS *that require the collection of* EVIDENCE *in order to answer the questions.* FINDINGS *considered against* STANDARDS *lead to evaluative* JUDGMENTS *and* RECOMMENDATIONS *which are directed back to the program.*


ENTER HERE TO EVALUATE EXISTING PROGRAM
IDENTIFYING NEEDS
DEVELOPING PROGRAM
CLARIFYING INTENTIONS
FORMULATING CRIT. QUES.
COLLECTING EVIDENCE
SYNTHESIZING FINDINGS
EMPLOYERS
EDUCATORS
CLIENTELE
EMPLOYMENT OPPORTUNITIES
NEEDS
PROGRAM
REALISTIC INTENTIONS
CRITERION QUESTIONS
EVIDENCE
FINDINGS
STANDARDS
INTERPRETING judgments
JUDGMENTS
INTERPRETING recommendations
RECOMMENDATIONS
REPORTING
REVISING

THE REALITY-BASED EVALUATION FORMS

A series of three forms is provided paralleling the RBE process phases to facilitate consistent recording of data as it is derived at each procedural step. They are:

Evaluation Outline Form: Phase I - Clarification (EOF-I)

Evaluation Outline Form: Phase II - Data Collection (EOF-II)

Evaluation Outline Form: Phase III - Judgments and Recommendations (EOF-III)

The forms are color coded as follows for easy identification:

EOF-I	*Yellow*
EOF-II	*Blue*
EOF-III	*Pink*

A reduced sample of each form accompanies the text describing each of the process phases. Full-size sample forms are provided at the end of the manual. The product of each phase is identified immediately beneath each form designation. Thus, Phase I produces a Management Outline; Phase II a Working Plan; and Phase III Evaluation Conclusions.

The columns on the evaluation forms correspond to the suggested procedural steps for each of the evaluation phases. Questions in italics immediately beneath the column headings are provided to guide responses in keeping with the specific information sought.

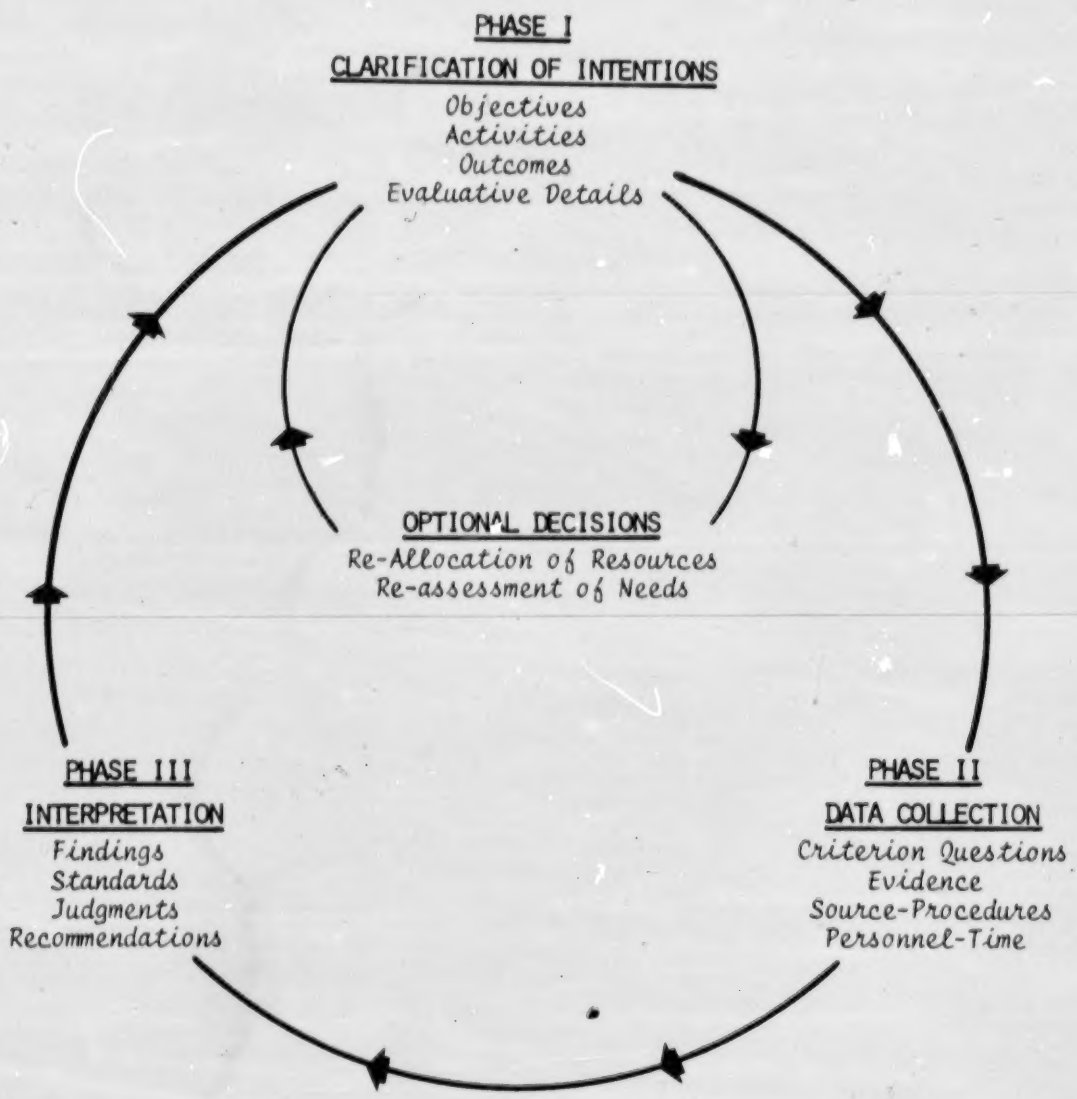
Forms may be completed either horizontally across the columns or vertically down the columns. The former, working across all columns for each objective, eliminates the need to estimate appropriate space for completing information on each objective. As well, it aids in maintaining continuity of thinking and assures maximum relatedness of information from column to column.

Not every column need be completed for each objective. For example,

in the case of simple objectives, the last column of EOF-II, Sources/Procedures/Personnel/Time, may not require completion if sufficient details are recorded under the last column of EOF-I, Evaluation Strategies. It may be the case, also, that an entire form can be eliminated when a very simple objective is involved. Thus, the Management Outline produced by Phase I may serve adequately as a Working Plan eliminating the need to complete an EOF-II entirely.

If an objective is complex and requires recording of detailed information in one or more of the columns, it may be advisable to reserve one form exclusively for that objective to avoid any unnecessary confusion among entries.

REALITY-BASED EVALUATION PROCEDURAL STEPS



Reality-based evaluation assumes that:

a) *A program exists,*

b) *A decision is made to evaluate it.*

These assumptions focus the process on three phases that interrelate in a feedback loop. Each phase has sequential steps that guide the evaluator throughout the process.

The user is encouraged to adapt the guidelines rather than adopt. In reality, each program has some unique aspects.

REALITY-BASED EVALUATION PROCEDURAL STEPS

Phase I, Clarification, results in a MANAGEMENT OUTLINE, *subject to change, based upon the realities of the program as you see them. Clarification is largely an outlining phase carried out by the manager of the evaluation effort and/or the evaluation team. In this phase the evaluator examines the existing goals, purposes, and objectives of the program and asks "What are the real program intentions?" If objectives are already written in behavioral terms with critera, deadlines, etc., the four steps become one step. If not, the four steps of linked statements approximate a behavioral or performance objective at the program level. Student level behavioral objectives may not be appropriate here -- there are potentially too many to handle. A program objective relates to groups of students and is otten seen as a collection or summation of many student performance objectives.*

EVALUATION OUTLINE FORM: Phase I - Clarification
Management Outline

Program _____ **EOF-I**

Evaluators _____

OBJECTIVES Short & Long Term	ACTIVITIES	INTENDED OUTCOMES Short & Long Term	EVALUATIVE STRATEGIES
Is this what we really intend to achieve, both short-range and long-range?	*What activities will actually take place in order to accomplish each objective?*	*What short-term and long-term results can we realistically expect to occur?*	*How can the outcomes be measured?*

Step 1, Objectives, requires the clarification or re-writing of existing goal statements into realsitic short-term and long-term objectives (intended accomplishments).

Step 2, Activities, links the actual activities that will or are being undertaken with the clarified statements of intentions.

Step 3, Intended Outcomes, links anticipated outcomes and realistic expectations to the objectives and activities.

Step 4, Evaluative Strategies, suggests ways in which the outcomes can be measured. A few key words will do, such as course grades, competency check lists, attitude survey or instructor judgment. Other notes, such as time and responsibility, may be added if readily determinable.

Phase II, Data Collection, results in an implementation or WORKING PLAN *that provides the details suggested in Phase I. Phase II may be carried out by the evaluation team but may also be completed by individual staff members with summaries presented to the evaluation team.*

Working through Phase II planning may also indicate that some modifications are needed in Phase I and the program itself. Make them. This is one of the benefits of evaluating programs locally.

EVALUATION OUTLINE FORM: Phase 2 - Data Collection Working Plan — Program _____ Evaluators _____ — **EOF-2**

OBJECTIVES	CRITERION QUESTIONS	EVIDENCE	Sources - Procedures - Personnel - Time
See EOF-1	What would an external evaluator ask given the clarified objective, activities and outcomes?	What evidence can be obtained to answer the Criterion Questions and support objective attainment?	Where can the best information be found? What instruments will be needed? What kinds of information already exist? How can it be collected? Who can assist? When will the desired information be needed?

Step 1 is titled Criterion Questions. The task at this point is to determine the questions that an external evaluator might want answered in order to

determine if program intentions have been accomplished (Phase I clarified objectives, activities and outcomes.). This task requires a different mental set from the program practitioner. The questions may be the objective statement rephrased, but experience has shown that the mental set of the evaluator will lead to process and sequence criteria as well as to outcome criteria.

Step 2, Evidence, is the response to the criterion question -- an identification of the specific evidence required to prove or at least suggest attainment of program intentions. The evaluation team may wish to summarize specific pieces of evidence collected by program staff members (i.e. course grades and skills) as well as collect evidence themselves (i.e. survey of attitudes). The problems of bias and the danger of the self-fulfilling prophecy will need to be considered in both steps. The evaluator has a unique point of view.

Step 3, Sources, Procedures, Personnel, Time, requires recording details of specific data gathering techniques related to the obtaining of evidence. The task of completing these details may force compromises of time, effort and expertise as well as dictate the adaption or adoption of tests, questionnaires, and survey forms. The details of Step 3 may also be obvious -- contained in well-focused objectives or in Phase I Evaluative Details.

Phase III, Interpretation, results in the compilation of EVALUATION CONCLUSIONS. *Interpretation may have already occurred to some extent during Phase I and II. As the program intentions were being clarified and related evidence collected, changes may have been recommended based upon meaning given to information. The steps of Interpretation often occur as an instant mental process but can be perceived to move in step-wise fashion.*

EVALUATION OUTLINE FORM: Phase 3-Interpretation Evaluation Conclusions

Program _____ **EOF-3**

Evaluators _____

OBJECTIVES	FINDINGS	STANDARDS	JUDGMENTS & RECOMMENDATIONS
See EOF-1	How can the data be summarized and/or synthesized into most meaningful findings?	What are the acceptable levels of performance?	To what extent is the program effective? What modifications should be considered? What questions are still unanswered? Which components of the program merit further study? How can the client, staff, program and institution benefit from what has been learned?

Step 1, Findings, refers to the evidence that was collected as a result of Phase II. This evidence often needs to be summarized or synthesized in order to relate to the criterion question(s) and the program objective(s). One kind of evidence may also relate to several questions.

Step 2, Standards, refers to the criteria with which findings are compared. These are usually formulations of acceptable levels of program performance. Internal professional standards are important but only part of reality. Standards may be qualitative and quantitative, educational and economic. Standards may also be like beauty, in the "mind" of the beholder.

Local evaluators should consider addressing differing standards as held by the Board of Trustees, the President, the Dean, the community, SUNY and the State Education Department.

Step 3, Judgments and Recommendations, results from the comparison of findings and standards. Judgments make statements on the effectiveness of the program and/or suggest modifications that should be considered. As well, they point up questions that remain unanswered. Judgments lead to feedback or Recommendations based upon the evaluative evidence usually made through reports. As with standards, Recommendations will also vary with the audience and in ways best known to the local practitioner/evaluator.

GUIDELINES TO REALITY-BASED EVALUATION

PHASE I - CLARIFICATION

Briefly read all steps.

Then proceed as appropriate given your program intentions.

1. Clarification of Objectives

--Review existing program goals and objectives and ask --

"Is this what we really intend to achieve, both short-range and long-range?"

(It may be important for you to clarify the relationship of your program intentions to the mission of the college and the goals of your functional area. This may involve creating new goals and related objectives.)

Task -- Revise, rewrite, or create program objectives to the extent needed making realistic statements that:

a) the program staff and the college can accept.

b) do not significantly alter the intent of the program as approved and generally understood.

c) suggest measurement criteria or standards to be attained.

2. Clarification of Activities

--Review clarified objectives and ask --

"What activities will actually take place in order to accomplish each objective?"

Task -- Briefly note the activities, instructional and procedural, as they relate to the clarified objectives.

3. Clarification of Intended Outcomes

--Review output of (1) and (2) above and ask --

"What short-term and long-term results can we realistically expect to occur?"

Task -- List the intended outcomes related to the program objectives and activities.

4. Clarification of Evaluative Criteria

--Review (1), (2), and (3) above and ask --

"How can the outcomes be assessed?"

Task -- List details as appropriate, i.e., competency checklist, student grades, entrance records, etc.

OPTIONAL BUT RECOMMENDED

--Review existing budget allocation; personnel, facilities, materials and time relative to the clarified objectives and ask --

a) "Is it feasible to operate the program as planned given the existing constraints?"

b) "Should we seek formal acceptance of the clarified program objectives?"

c) "Should we seek a budget amendment and/or re-allocation of resources?"

d) "Are the statements of needs for the program both sufficient and real or are more data required?"

e) "Has the program been compared with possible alternatives to determine its relative viability?"

Product at this point -- A completed Phase I evaluation outline form reflecting the reality of the program's operational status that becomes a management outline for those having responsibility for subsequent phases of the evaluation process.

All columns may not require words. Some objectives may contain the outcomes and evaluative details. Some activities may relate to several objectives. Adapt the form as it is of most use to you and your program.

EVALUATION OUTLINE FORM: Phase I - Clarification

Management Outline

Program _____

Evaluators _____

EOF-I

OBJECTIVES Short & Long Term	ACTIVITIES	INTENDED OUTCOMES Short & Long Term	EVALUATIVE STRATEGIES
Is this what we really intend to achieve, both short-range and long range?	*What activities will actually take place in order to accomplish each objective?*	*What short-term and long-term results can we realistically expect to occur?*	*How can the outcomes be measured?*
In cooperative education experience students will demonstrate minimum competencies required in the occupational field as judged by the cooperating employer and faculty co-op ed coordinator.	*Co-op ed experience.*	*Demonstrated minimum competencies.*	*Judgment of employer and co-op ed coordinator.*
All students that successfully complete the data processing course of study will be able to obtain a passing grade on the MBI Basic Programming Competency Test.			*MBI-BPC Test will be administered as part of final exam.*

Sample

PHASE II - DATA COLLECTION

1. *Criterion Questions*

   --Review Phase I plan from the point of view of the evaluator and ask --

   "What would an external evaluator ask given the clarified objectives, activities, and outcomes?"

   Task -- List the questions that, when answered, point to the attainment of objectives. These questions may refer to procedures as well as exit criteria, sequence as well as individual events, interim outcomes as well as final outcomes.

2. *Evidence*

   --Review the Criterion Questions and clarified objectives and ask --

   "What evidence can be obtained to answer the Criterion Questions and support the attainment of objectives?"

   Task -- List the specific pieces of evidence that an evaluator would seek relative to the clarified objectives or criterion questions. These data may be very similar to Phase I Outcomes. There may also be more detailed data that individuals will collect and summarize.

3. *Source-Procedures-Personnel-Time*

   --Review the Evidence and the Evaluative Strategies (Phase I) and ask --

   "Where can the best information be found?"
   "What instruments will be needed?"
   "What kinds of information already exist?"
   "How can it be collected?"
   "Who can assist?"
   "When will the desired information be needed?"

   Task -- Complete the details needed to obtain the data.

Note: This phase may be organized and delegated to staff members by primary area of responsibility. The evaluator(s) would then focus on summary statements that represent a compilation of the more detailed data collection efforts of the staff.

Product at this point -- A completed Phase II form, formulated from the point of view of the evaluator, that becomes a working plan for the program staff, showing specific criterion questions, evidence needed, and details of obtaining the evidence.

EVALUATION OUTLINE FORM: Phase 2 - Data Collection

Working Plan

Program _____ EOF-2

Evaluators _____

OBJECTIVES	CRITERION QUESTIONS	EVIDENCE	Sources – Procedures – Personnel – Time
See EOF-1	What would an external evaluator ask given the clarified objective, activities and outcomes?	What evidence can be obtained to answer the Criterion Questions and support objective attainment?	Where can the best information be found? What instruments will be needed? What kinds of information already exist? How can it be collected? Who can assist? When will the desired information be needed?
Co-op ed demonstration of competencies.	Is the cooperative work experience requiring students to apply skills learned in the classroom? Is the cooperative work experience providing for additional skills development?	Student opinions, employer judgments, co-op coordinator observations.	Sources: Students, employer, co-op coordinator. Instruments: Co-op student attitude survey, coordinator observation reports. Program director and co-op coordinator will collect data mid-way in co-op experience.
100% will pass MBI-BPC Test	How many took the test? What is the distribution of scores? How many did not take the test? Why not? What constitutes successful completion of the course of study?		D.P. instructor administers test, obtains scores and reports to chairman.

Sample

PHASE III - INTERPRETATION

1. Findings

--Consider all obtained data, review Phase I Objectives and Outcomes and ask --

"How can the data be summarized and presented in the most meaningful way?"

Task -- List findings, usually factual statements, relative to each objective (Save the accompanying judgments and recommendations that may already have come to mind.).

2. Standards

--Review Phase I objectives, policy, need and purpose statements and ask --

"What are the acceptable levels of program performance?"

Task -- List the acceptable levels of performance as seen by the program staff, administration, and other interested groups.

Note: Ideally standards exist external to the program. Realistically standards may be derived from the program objectives or criterion measures. An operational standard may also be "the best we can do" or "financially self-supporting."

3. Judgments

--Consider the findings at hand, in relation to the standards and program objectives as they are understood and ask --

"To what extent is the program effective?"
"What modifications should be considered?"
"What questions are still unanswered?"
"Which components of the program merit further study?"

Task -- List the judgmental statements for each objective noting the use of opinions in addition to the evidence.

4. Recommendations

--Consider the Findings, Standards and Judgments and ask --

"How can the client, staff, program and institution benefit from what has been learned?"

Task -- Determine the recommendations that should be made and the form that will best communicate to each audience - and report.

Product at this point -- A completed Phase III evaluation outline form providing evaluation conclusions consisting of judgments and recommendations upon which final reporting is based.

EVALUATION OUTLINE FORM: Phase 3 - Interpretation

Evaluation Conclusions

Program _____

Evaluators _____

EOF-3

OBJECTIVES	FINDINGS	STANDARDS	JUDGMENTS & RECOMMENDATIONS
See EOF-1	How can the data be summarized and/or synthesized into most meaningful findings?	What are the acceptable levels of performance?	To what extent is the program effective? What modifications should be considered? What questions are still unanswered? Which components of the program merit further study? How can the client, staff, program and institution benefit from what has been learned?
Co-op ed demonstration of competencies.	On co-op attitude survey 80% of the students responded that the work experience required them to apply skills learned in the classroom -- "to some extent." No one responded "to a large extent." Co-op coordinator observations indicate more positive result than student opinion.	All co-op experiences will require all students to apply skills learned to as large an extent as possible.	Objective met at minimum acceptance level. Recommend revision in student attitude instrument and better orientation of employer to student need.
	Essentially the same findings as for previous Criterion Question.	All co-op experiences will result in all students acquiring some new skills.	Objective met very satisfactorily. Recommend student interviews to obtain identification of specific skills.
100% will pass MBI-BPC Test.	35 of 40 students took the test -- 31 passed the test and 4 failed by 5 points or less; 5 students did not take the test because of failing grades in their course work, passing all D.P. courses and maintaining a grade point average of at least 1.5 (C-). The four students who failed had less than 2.0 averages.	100% will pass.	Objective was not met. Only 90% passed the test. We recommend that students be required to have a 2.0 average in order to take the MBI-BPC Test.

Sample

The following pages are included as initial references or discussion cues that may be useful at various time points in a local evaluation effort. Student behavioral objectives may have to be combined into program objectives to facilitate both planning and reporting evaluative findings. Selecting the appropriate data collection techniques is nearly always a problem. Cost analysis is often excluded from program evaluation efforts but will be addressed at some point in all programs. These pages will not provide definitive answers but may serve as reminders or items to consider.

SAMPLE CATEGORIES OF OCCUPATIONAL PROGRAM OUTCOMES

1. *The acquisition of minimum sets of theories, concepts and knowledges in selected subject fields.*

2. *The acquisition and demonstration of minimum sets of skills, competencies or performances related to occupational tasks.*

3. *Positive attitudes or satisfaction towards study, work, and people.*

4. *Basic communication and computational skills.*

5. *Acquisition of job-seeking skills and knowledges.*

6. *Employment in a training-related field if desired.*

7. *Licensure.*

8. *Continued education or training.*

9. *Congruency of curriculum content and occupational field requirements.*

10. *Quality and quantity of services rendered.*

SELECTED DATA COLLECTION TECHNIQUES

a) *INFORMAL DISCUSSIONS*

The relaxed, natural situation typical of informal discussion can provide important process clues as well as a powerful mechanism for monitoring progress. They are frequently crucial for sustaining staff morale in the face of on-going evaluation. Caution should be maintained for biased opinion and confidentiality assured when appropriate.

b) *STAFF MEETINGS*

Regularly scheduled staff gatherings have many of the advantages of informal discussion but with the added constraint of usually mandatory group attendance. They are useful for brainstorming and first level interpretation from a collective rather than an individual perspective.

c) *OBSERVATION*

Linked with informal discussion, observation can be useful in clarifying a report if the "spy" image is consciously avoided. It is usually most valuable as a secondary, corroborative information source.

d) *REVIEW OF EXISTING COLLEGE RECORDS*

Records frequently provide a place to begin the collection of more formal quantitative data. Usually more information has actually been collected than is readily available. Access to and use of certain records is often constrained by confidentiality and attitudes of bureaucratic ownership.

e) *COMMERCIAL TESTS/SURVEYS*

Commercially produced, mass-market testing materials should be questioned concerning their validity in any specific application to assure their appropriateness. However, they have advantages in their proven reliability and their potential for comparison among groups. Caution should always be exercised against unwarranted interpretation.

f) *LOCALLY-MADE QUESTIONNAIRES AND SURVEYS*

Tailor-made data collection instruments are time consuming to construct and validate but are often the only and best specific indicators of program activities and results. They need careful field-testing involving the assistance of on-campus personnel. Items should be eliminated which lead responders to desired answers. Well constructed and administered, they are relatively inexpensive per return.

g) *INTERVIEWS*

Individually conducted interviews are costly in time but provide a depth of information and subjective evaluation difficult to acquire otherwise. They should be structured to maintain uniformity and assist in the tabulation of responses. Interviewing skill is essential, and careful field-testing is highly desirable.

h) *CLASS EXAMINATIONS/GRADES*

These data sources usually provide far more information than is needed. The problem is one of carefully selecting out the significant parts for the particular evaluation objectives. The instructor should always be sought as interpreter. Such data have the limitations of being time-point oriented and measures of cognitive domain achievement only.

i) *PERFORMANCE/PROFICIENCY TESTS*

Instruments to assess levels of performance and proficiency achievement are costly to administer and develop but are one the few reliable ways of measuring the application of knowledge. They should incorporate both industry and union task competency levels since they are usually assumed to be reliable predictors of employability.

Cost Analysis

Most of us become concerned with cost analysis at some point in time. Essentially there are three approaches depending upon what questions are being asked.

(a) developing information such as annual cost per student for the total program or the additional cost of a service or program component (usual budgetary information with the quality dimension assumed or neglected). The techniques are usually estimation, addition and division that result in findings such as $1700 per student, $370 per student for instructional supplies and equipment and a student-faculty ratio of 18/1.

Initial Reference: Local business administrator

(b) developing information as in (a) above and linking the cost to a measure of the effectiveness of the program or program component -- a textbook application of this analysis technique would be the cost-effectiveness comparison of Program X and Program Y given that both programs have the same objectives but have differing activities.

The findings might result in a table as follows:

	Program X	Program Y
Effectiveness Rating[1]	75%	85%
Student-Faculty Ratio	18/1	17.5/1
Total Cost per Student	$1400	$1600

[1] *Effectiveness is defined by supporting documents.*

Initial Reference: Somers, Gerald G., The Effectiveness of Vocational & Technical Programs, University of Wisconsin-Madison, Madison, Wisc., 1971.

(c) developing information that links costs and benefits to the individual and/or to society. This approach requires that the benefits be translated into monetary terms and viewed as one way to invest that money (education), calculating the returns on the investment over time compared to the returns on another investment method. (In some studies the comparative investment is an interest-bearing bank account; in education it may be another program of study or related directly to a job.)

The findings of a cost-benefit study might be as follows: Seven years after graduation from high school the average AAS graduate of Program X has earned 12% more than the comparable non-college attender assuming an investment return of 6% on the cost of education.

Initial Reference: A professor of economics.

A Guide To Further Study

If you need help with . . .	*Refer to: Annotated Bibliography Reference Numbers*
Improving staff attitude toward evaluation	*4,5,6,9*
Distinguishing between describing and judging program results	*8*
Developing criteria for judging a program	*2,5,9,10*
Determining what parts of a program to evaluate	*4,8,9*
Identifying appropriate data bases and data sources	*3*
Deciding whether to consult an outside evaluation expert	*1*
Setting performance standards	*5,8,9*
Determining the kind of data needed	*4,8,9*
Developing evaluation reports	*4,11*
Getting evaluation findings used	*4,5,6,11*
Evaluating evaluation	*4,11*
Organizing a comprehensive program review, accreditation team, etc.	*4,7*
Preparing for an accreditation team or comprehensive review	*4,9,11*
Identifying flaws and limitations in data as a basis for arguing against an unfavorable evaluation or assessing probable data accuracy	*4,11*

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1. *Alexander, Frank D. "A Critique of Evaluation". Journal of Cooperative Extension, III, Winter 1965, 205-212. -- Data gathering activities are grouped into five main categories: habitual but unorganized, simple guides, reporting by students or teacher, post- or pre- and post-testing, and experimental design. Although program personnel are responsible for carrying out most of the activities, help should be gotten from specialists for more complicated activities.*

2. *Browder, Leslie H., Jr. Emerging Patterns of Administrative Accountability Berkeley, California: McCutchan Publishing Corporation, 1971. pp. 1-21.-- Programmers funded through tax monies are stewards of those monies and responsible for producing adequate results.*

3. *Lamrock, A.L., A.D. Smith, and P.W. Warren. "Evaluation: Its Scope and Systems for Evaluation Development". Paper prepared for meeting of Research Directors of New Start Corporation, Ottawa, Canada, March 29-31, 1971. -- The general scope of evaluation is indicated by: topic areas where decisions are made, type of data base used, source of data, and time of the decision.*

4. *Phi Delta Kappa National Study Committee on Evaluation. Educational Evaluation and Decision Making. Itasca, Illinois: F.E. Peacock Publishers, Inc., 1971. -- Four types of evaluation -- context, input, process, and product - correspond to four major kinds of decisions -- planning, structuring, implementing and recycling.*

5. *Provus, Malcolm. Discrepancy Evaluation. Berkeley, California: McCutchan Publishing Co., 1971. -- Program personnel set standards for activities at each programming stage -- design, installation, process and product -- and for the results expected. Actual performance is compared with the standards and discrepancies for areas for improvement identified.*

6. *Rippey, Robert M. "Can Evaluation Be Integral to Innovation"? In Curriculum Evaluation: Potentiality and Reality, Joel Weiss, ed. Curriculum Theory Network Monograph Supplement. Ontario, Canada: Ontario Institute for Studies in Education, 1972, pp. 45-58. -- Transactional evaluation considers the beliefs and feelings of people as they react to suggested changes.*

7. *Scriven, Michael S. "The Methodology of Evaluation". In Perspectives of Curriculum Evaluation. Ralph W. Tyler, Robert Gagne, and Michael Scriven, eds. AERA Monograph Series on Curriculum Evaluation, No. 1 Chicago: Rand McNally, 1967. -- Results of programs are judged against the originating need. Cost of producing those results is considered in relation to costs of alternatives.*

8. Stake, Robert E. "The Countenance of Educational Evaluation". Teachers College Record, LXVIII (1967), 523-40. Evaluation data are categorized as being either descriptive or judgmental. Both descriptive and judgmental data are gathered about antecedents, transactions and outcomes. Examining contingencies and congruencies among the sets of data is an important part of evaluation.

9. Steele, Sara M. "Program Evaluation -- A Broader Definition". Journal of Extension VIII (Summer, 1970), 5-17. -- Emphasizes three major elements of evaluation: criteria, evidence and judgment. It emphasizes improving the kind of evaluation that program personnel do naturally rather than placing such activities with elaborate formalized procedures.

10. Steele, Sara M. Cost-Benefit Analysis and the Adult Educator. Syracuse, New York. ERIC Clearinghouse on Adult Education and Adult Education Association of the U.S.A., 1971. -- Evaluation of the amount of benefits in comparison with the costs of the benefits and with alternative investments of the same resources.

11. Suchman, Edward A. Evaluative Research. New York: Russell Sage Foundation, 1971. -- The processes of getting, processing, and reporting the data used in evaluation have been presented in many ways. The framework accompanying the program decision model is particularly comprehensive.

GENERAL REFERENCES

Anderson, Ball, Murphy and Associates. Encyclopedia of Education Evaluation. Jossey-Bass, Washington, 1975.

Mayer, Robert. Analyzing Performance Problems. Fearon Publishers, Belmont, California, 1970.

Steele, Sata M. Contemporary Approaches to Program Evaluation, ERIC Clearinghouse on Adult Education, Education Resources Division, Capitol Publications, Inc., Washington, D.C.

EPILOGUE

The end of an informal meeting in Chairperson Adomiak's office . . .

Adomiak: "Essentially that's the picture. This approach to evaluating programs is meant to be followed or altered as each of us feels is appropriate for our particular program."

French: "At least there's a certain logic to it, but it doesn't solve all of my problems."

Nägele: "Such as?"

French: "If I asked my staff to list their objectives, I'd get long lists of performance objectives from some and nothing from others. How do I organize things into a manageable state?"

Adomiak: "Would you really want anyone but you and your staff to do that?"

(pause)

Nägele: "Has this approach been tried by anyone?"

Adomiak: "We have been developing the materials together as we went along this past year. Several of us have worked through various parts. Most of us have tried Phase I, the planning stage. It looks to us as if the approach is flexible enough to work, but more extensive field use is planned for this year. We have a good group of people from many of the two-year colleges working with us."

Nägele: "Maybe I'll give it a try. Will the project accept newcomers?"

Adomiak: "I think so. We want reactions and suggestions for revision based upon the reality of field use.

French: "I still think evaluation is a lot of work, more than the Dean thinks it will be."

(Continued)

Adomiak: *"Maybe the three of us could work together, iron out some of the problems, improve the guidelines, and take care of our local needs at the same time?"*

Nägele: *"You know, the guidelines are not much more than organized common sense."*

Adomiak: *"Yes! Isn't that nice for a change."*

EVALUATION OUTLINE FORM: Phase I - Clarification

Management Outline

Program _____

Evaluators _____

EOF-I

OBJECTIVES Short & Long Term	ACTIVITIES	INTENDED OUTCOMES Short & Long Term	EVALUATIVE STRATEGIES
Is this what we really intend to achieve, both short-range and long-range?	*What activities will actually take place in order to accomplish each objective?*	*What short-term and long-term results can we realistically expect to occur?*	*How can the outcomes be measured?*

EVALUATION OUTLINE FORM: Phase 2 - Data Collection

Working Plan

Program _____ EOF-2

Evaluators _____

OBJECTIVES	CRITERION QUESTIONS	EVIDENCE	Sources – Procedures – Personnel – Time
See EOF-1	What would an external evaluator ask given the clarified objective, activities and outcomes?	What evidence can be obtained to answer the Criterion Questions and support objective attainment?	Where can the best information be found? What instruments will be needed? What kinds of information already exist? How can it be collected? Who can assist? When will the desired information be needed?

EVALUATION OUTLINE FORM: Phase 3 - Interpretation

Evaluation Conclusions

Program _____

Evaluators _____

EOF-3

OBJECTIVES	FINDINGS	STANDARDS	JUDGMENTS & RECOMMENDATIONS
See EOF-1	How can the data be summarized and/or synthesized into most meaningful findings?	What are the acceptable levels of performance?	To what extent is the program effective? What modifications should be considered? What questions are still unanswered? Which components of the program merit further study? How can the client, staff, program and institution benefit from what has been learned?

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1975
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